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(FILE 'HOME' ENTERED AT 07:45:41 ON 10 JUN 2002)
FILE 'REGISTRY' ENTERED AT 07:45:51 ON 10 JUN 2002
E POLYPROPYLENE/CN

L1 1 S E3
FILE 'CA' ENTERED AT 07:51:04 ON 10 JUN 2002
L2 143215 S L1 OR (PROPENE OR PROPYLENE) (2A) (POLYMER OR HOMOPOLYMER) OR
POLYPROPENE OR POLYPROPYLENE
L3 2603 S L2 AND ELECTRODE
L4 55 S L3 AND (CONDUCTI? OR CONDUCTAN? OR RESISTIV? OR
RESISTAN?) (6A) (DETECT? OR DETERMIN? OR MEASUR? OR MONITOR? OR SENSOR
OR SENSE# OR SENSING OR PROBE# OR PROBING OR TEST?)

=> d 14 bib, ab 1-55

14 ANSWER 12 OF 55 CA COPYRIGHT 2002 ACS
AN 130:200242 CA
TI Three-**electrode** electrochemical gas sensor
PA Senco Sensors Inc., Can.
SO Eur. Pat. Appl., 11 pp.
PI EP 902281 A2 19990317 EP 1998-307336 19980910
US 6129825 A 20001010 US 1997-939669 19970929
PRAI CA 1997-2215108 A 19970911
AB A simple, reliable, and leak-proof three-**electrode** electrochem. sensor for
detection of toxic gases. The sensor comprises a housing having an
electrochem. gas sensor cell with an electrolyte and **sensing**, counter and
ref. **electrodes** bonded to **conductive** plastic. Each of the **electrodes** is a
membrane formed from a fluoropolymer film having a layer adhered thereto of
a fluoropolymer-impregnated catalyst. The layers of each of the **electrodes**
are bonded to conductive plastic, and are sepd. by an absorbent material
having an electrolyte absorbed therein. The sensor is particularly
intended for detection of carbon monoxide, but may be used to detect other
gases.

L4 ANSWER 14 OF 55 CA COPYRIGHT 2002 ACS
AN 128:67722 CA
TI Studies of changes of pH, H⁺ ion limiting current, conductivity and
temperature during sol-gel processes in a TMOS system
AU Breiter, M. W.; Fafilek, G.
CS Institut fuer Technische Elektrochemie, TU Wien, 9 Getreidemarkt, 1060,
Vienna, Austria
SO Journal of Electroanalytical Chemistry (1997), 433(1-2), 107-111
AB Two gas-tight cells with appropriate **electrodes** were constructed of
transparent **polypropylene** and kept at const. temp. in a water bath.
Simultaneous **measurements** of pH, **cond.** and temp. as a function of time were
carried out in the 1st cell contg. a soln. with the molar ratio
(TMOS:H₂O:HCl) of 1:4:10⁻³ or 1:4:10⁻⁴ (TMOS = tetramethoxysilane). The H⁺
ion limiting current was periodically detd. by linear voltammetry on a Pt
microelectrode in the 2nd cell with the same soln. The measurements were
made in deoxygenated solns., at 25°, 40° or 50° and extended to a point
after gelation until the contact between the resp. **electrode** and the gel
broke down. A significant temp. change occurs in the 1st 20 min after
mixing. Strong fluctuations of pH and cond. were obsd. in this period.
The subsequent changes with time of temp., pH, cond. and limiting current
were small. The results are discussed in relation to other studies.

L4 ANSWER 24 OF 55 CA COPYRIGHT 2002 ACS

AN 110:213848 CA
TI Role of surface moisture of samples in the **determination** of volume **resistivity** of polymers
AU Kolesov, I. S.; Kleshnya, V. B.; Kolesov, S. N.
CS Dnepropetr. Metall. Inst., Dnepropetrovsk, USSR
SO Zavod. Lab. (1989), 55(1), 47-8
AB In the **detn.** of vol. elec. **resistance** (ρ) of polymers using sputtered or prepressed (with Al foil) **electrodes**, the presence of adsorbed surface moisture on the polymer sample significantly decreased ρ values detd. with sputtered **electrodes**, esp. for polar polymer samples. The surface moisture influence was weaker with prepressed **electrodes** and with nonpolar polymer samples. Desorption of surface moisture from the polymer samples for more accurate detns. should be done directly before or during detn. and can be accomplished satisfactorily by placing the samples for 5 h at room temp. in a hermetic measuring cell either contg. a moisture absorber or evacuated to a high vacuum.

114 ANSWER 32 OF 55 CA COPYRIGHT 2002 ACS
AN 104:91089 CA
TI Humidity sensor
IN Takenishi, Soichiro
PA Nisshin Spinning Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
PI JP 60200152 A2 19851009 JP 1984-56800 19840324
AB An elec. **resistance** and capacitance type humidity **sensor** comprises a humidity sensitive and flexible film or sheet from a porous body such as fabric, nonwoven fabric and knitting materials having moisture sensing capacity and a pair of flexible, porous **electrode** means from C or elec. conductive metal films. Thus, a **polypropylene** nonwoven fabric ion coated with a Au film was impregnated with an aq. soln. contg. Na styrene sulfomate-glycidyl methacrylate copolymer and glycerin 20 PHR, heated at 150° for 2 h, and shaped to obtain a humidity sensor. It exhibited linearly changing elec. resistance ($1 \times 10^3 - 5 \times 10^6 \Omega$) at a relative humidity range of 20-100%.

114 ANSWER 34 OF 55 CA COPYRIGHT 2002 ACS
AN 104:21074 CA
TI Moisture-sensing device
IN Sakai, Yoshiro; Sadaoka, Yoshihiko
PA Shinyei Kaisha, Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
PI JP 60177255 A2 19850911 JP 1984-31998 19840222
AB Graft copolymers, prepd. by grafting hydrophilic monomers to hydrophobic microporous polymer film, is equipped with porous metal **electrodes** to give moisture-sensing devices. The devices show excellent durability and water resistance. Thus, styrene, grafted onto Duragard (porous **polypropylene** film), was sulfonated and then equipped with Au **electrodes** to give a moisture-sensing device which showed excellent water **resistance**, dust **resistance**, and had durable and stable moisture-sensing properties.

114 ANSWER 37 OF 55 CA COPYRIGHT 2002 ACS
AN 102:62934 CA
TI Concerning the radiation-induced surface conductivity in polymers
AU Tyutnev, A. P.; Saenko, V. S.; Vannikov, A. V.; Pozhidaev, E. D.
CS Moscow Inst. Electron. Mach. Build., Moscow, 109028, USSR
SO Phys. Status Solidi A (1984), 86(2), 709-16
AB All aspects of radiation-induced surface cond. in polymers are discussed with emphasis on the role of the bulk processes during measurement and

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possible side effects connected with low-energy secondary electrons. The conventional scheme of surface **cond. measurements** is esp. sensitive to secondary electrons and is fully controlled by secondary emission. A proposed 4-probe technique eliminates both these factors (bulk contribution as well as secondary emission). Conformal mapping is used to predict the elec. field distribution in this geometry and across the gap between the source and drain **electrodes**.

L4 ANSWER 43 OF 55 CA COPYRIGHT 2002 ACS

AN 96:105113 CA

TI Evaluation of the film structure imperfections from electric conductivity by the statistical analysis of data

AU Morgunov, N. N.; Yankovskaya, N. K.; Budtov, V. P.

CS USSR

SO Plast. Massy (1982), (1), 53-5

AB A method based on statistical anal. of the corresponding of exptl. **detd.** elec. **cond.** with a theor. selected distribution function, which permits a quant. evaluation of polymer films with respect to the presence of defects, is developed and used in selection of samples for examn. of elec., temp., and other properties of polymers. The elec. cond. of extruded polyethylene (I) [9002-88-4] and biaxially oriented isotactic **polypropylene** (II) [25085-53-4] was measured at a given voltage and **electrode** surface area with the current strength **detd.** 60 s after application of the voltage in a const. elec. field using a 2-**electrode** method. The measurement error was <10%, and the total error in **detn.** of the current strength was 20-25%. The treatment of elec. cond. data for I and II confirmed an increase in the sensitivity of the method by changing the exptl. conditions.

IV4 ANSWER 52 OF 55 CA COPYRIGHT 2002 ACS

AN 70:102803 CA

TI Universal diffusion-sorption type gas analyzer

IN Tsien, Hsue C.

PA Esso Research and Engineering Co.

SO U.S., 7 pp.

PI US 3431771

A 19690311

US 1965-438841

19650311

AB An inexpensive gas analyzer for the qual. and quant. detection of a gas in a mixt. of various gases was described. The app. consists of an outer tubular container, an inner tubular container annularly spaced from the outer container and consisting of a diffusion barrier, means for supplying a liq. absorbent in the form of thin film inside the inner container, and means for supplying a gaseous mixt. which contains a detectable amt. of absorbable gas to the outer surface of the diffusion barrier. The proportions of absorbable gas could be **measured** by observing the elec. **resistance** changes by using a pair of **electrodes** in contact with the walls of the thin film cylinder. **Polypropylene**, poly-(vinyl chloride), Ascarite, Hopcalite, Salcomine, Hg, Zn, and Cu compds. were used as gas adsorbents. At const. total mass flow the differential pressure of gas between the inside and outside of the microporous element is a linear function of percentage compn. of the sorbate gas.

L4 ANSWER 54 OF 55 CA COPYRIGHT 2002 ACS

AN 67:34304 CA

TI Humidity-sensing devices

IN Charlson, Robert J.; Buettner, Konrad J. K.

PA Research Corp.

SO U.S., 3 pp.

PI US 3315518

19670425

US

19660207

AB An app. comprising a pair of spaced gas permeable **electrodes**, a fluid-

permeable body of substrate having a large ratio of surface-area-to-mass placed between the conductors, and carrying a coating layer of nonionizing hygroscopic liquid eliminates or alleviates hysteresis and poor repeatability in measuring the moisture content of a gas. Suitable substrate materials are nonhygroscopic, nonabsorbent polymeric solids having a dielec. const. <4 , such as granular poly(tetrafluoroethylene) (Fluoropak), silica glasses, and other polyunsaturates, as polyethylene, **polypropylene**, and polystyrene. Hygroscopic liquids suitable for the coating layer include polyethylene glycols, triethylene glycol dimethylether, tetramethylene glycol dimethylether and, at low temp., glycerol. The thickness of liquid film on the substrate granules is typically of the order of 2500 Å.

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